

Toronto Prep School

Final Examination

SNC2D -Science 10

Teacher: Mr. Winson

Date: Wednesday, June 11th, 2014

Time: 1:00 p.m. – 3:00 p.m.

Total Marks: 120



Student’s Name:

Instructions:

- 1. This exam comprises 14 pages (including the cover). The last three pages are reference material.
- 2. Read all of the questions and associated instructions very carefully.
- 3. Do all of the work on this exam. You may use the back of a page if you require additional space.
- 4. Manage your time. Each section is broken down into Biology, Chemistry, Earth and Space Science, and Physics in that order.
- 5. Do not leave a question blank, as it is possible to receive part marks.
- 6. You may use a calculator and a ruler.
- 7. Show all of your work to receive full marks.


Examination Breakdown

Section	Knowledge	Application	Communication	Thinking	Time
Multiple Choice	30	N/A	N/A	N/A	15 Minutes
Matching and Naming	N/A	12	N/A	N/A	10 Minutes
Diagrams	N/A	8	7	N/A	10 Minutes
Short Answers	N/A	10	23	8	40 Minutes
Calculation Questions	N/A	N/A	N/A	22	15 Minutes
Review	N/A	N/A	N/A	N/A	30 Minutes
Totals	30	30	30	30	120

Biology- 28 marks	Earth and Space Science- 27 marks
Chemistry - 33 marks	Physics- 32 marks

The colours of indicators in acidic and basic solutions

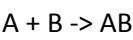
Indicator	Colour on acid side	pH at colour change	Colour on basic side
methyl orange	red	3–5	yellow
litmus	red	5–8	blue
phenolphthalein	colourless	8–10	pink

Two Activity Series		
Metals	Decreasing Activity	Halogens
lithium potassium calcium sodium magnesium aluminum zinc chromium iron nickel tin lead HYDROGEN* copper mercury silver platinum gold		fluorine chlorine bromine iodine

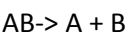
Mono	1	I
Di	2	II
Tri	3	III
Tetra	4	IV
Penta	5	V
Hexa	6	VI
Hepta	7	VII
Octa	8	VIII

Elements that get a subscript of 2: H O F Br I N Cl

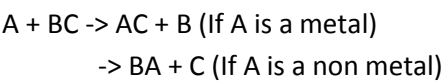
Synthesis :



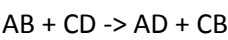
Decomposition



Single Displacement



Double Displacement



Equations

Mirror/Thin Lens Equation

$$\frac{1}{f} = \frac{1}{d_i} + \frac{1}{d_o}$$

Magnification Equation

$$m = \frac{h_i}{h_o} = \frac{-d_i}{d_o}$$

Index of Refraction

$$n = \frac{c}{v} \qquad c = 3.00 \times 10^8 \text{ m/s}$$

Substance	Index of Refraction, n
vacuum	1.0000
air	1.0003
ice	1.31
water	1.33
ethanol	1.37
glycerin	1.47
fused quartz glass	1.47
crown glass	1.52
Lucite or Plexiglas	1.52
light flint glass	1.58
ruby	1.54
zircon	1.92
diamond	2.42

PERIODIC TABLE OF IONS

	TABLE OF POLYATOMIC IONS	
acetate	CH_3COO^-	oxalate
arsenate	AsO_4^{3-}	perchlorate
arsenite	AsO_3^{3-}	periodate
benzoate	$\text{C}_6\text{H}_5\text{COO}^-$	permanganate
borate	BO_3^{3-}	peroxide
bromate	BrO_3^-	phosphate
carbonate	CO_3^{2-}	pyrophosphoric acid
chlorate	ClO_3^-	sulfate
chloride	Cl^-	sulfite
chlorite	ClO_2^-	thiocyanate
chromate	CrO_4^{2-}	thiosulfate
cyanate	CN^-	
dichromate	$\text{Cr}_2\text{O}_7^{2-}$	

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